CLAIMS

What is claimed is:

1. In a method for influencing the roll behavior in motor vehicles, having a vehicle body with an engine and at least three wheels, for each wheel or stabilizer with at least one actuator acting on the wheels and the vehicle body, and a steering wheel for steering said motor vehicle, said method comprising the steps of

- measuring a steering wheel angle (δ_{LR}), a traveling speed (v_0), a transverse acceleration (a_{yr}) of the vehicle and at least the speed (n_M) of said engine,
- calculating the theoretical transverse acceleration ($a_{y,theo}$) of the vehicle from the steering wheel angle (δ_{LR}) and the traveling speed (v_0),
- calculating a roll momentum distribution ($M_{W,v} \leftrightarrow M_{W,h}$) from a measured transverse acceleration ($a_{y,meas}$) or the calculated transverse acceleration ($a_{y,theo}$), the engine speed (n_M) and a variable which is proportional to the position of the accelerator pedal,
- determining the actuator forces from the data relating to the transverse acceleration ($a_{y,meas}$ or $a_{y,theo}$) and a roll momentum distribution ($M_{W,v} \leftrightarrow M_{W,h}$), and
- controlling the supply of energy to the actuators on the basis of the data relating to the respective actuator forces ($F_{actuator}$), the improvement, wherein
- the wheel speeds (n_R) at least at two wheels of an axle are measured, and the traveling speed (v_0) which is nec-

essary to calculate the transverse acceleration ($a_{y,theo}$) is calculated from the wheel speeds (n_R),

- the engine torque (M_M) is determined from at last one of measurements made at the drive engine and engine-typical measurement data and characteristic diagrams,
- the theoretical transverse acceleration ($a_{y,theo}$) is compared with a threshold value ($a_{y,theo,Sw}$),the actuators being inactive until the threshold value ($a_{y,theo,Sw}$) is reached, and, when the threshold value ($a_{y,theo,Sw}$) is exceeded, the difference (Δa_y) between the theoretical transverse acceleration ($a_{y,theo}$) and the measured transverse acceleration ($a_{y,meas}$)is determined,
- the difference (Δa_y) is compared with a differential threshold value ($\Delta a_{y,Sw}$), the calculated transverse acceleration ($a_{y,theo}$) being used as the momentary transverse acceleration ($a_{y,cur}$) until the differential threshold value ($\Delta a_{y,Sw}$) is reached, and, when the differential threshold value ($\Delta a_{y,Sw}$) is exceeded, the measured transverse acceleration ($a_{y,meas}$) is used as the momentary transverse acceleration ($a_{y,cur}$),
- a roll momentum distribution ($M_{w,v,0} \leftrightarrow M_{W,h,0}$) is determined for a predefined, normal traveling state range as a function of the rotational speeds (n_R) of the vehicle wheels of an axle, the momentary transverse acceleration ($a_{y,cur}$) and a change (ΔA_M) in the drive torque,
- the rotational speeds (n_R) of the axles or wheels, the current transverse acceleration ($a_{y,cur}$) and the change (ΔA_m) in the drive torque are compared with corresponding threshold values ($v_{0,Sw}, a_{y,cur,Sw}$, $\Delta A_{M,Sw}$), the first-translated roll momentum distribution ($M_{W,v,0} \leftrightarrow M_{W,h,0}$) being used as the momentary roll momentum distribution ($M_{W,v,cur} \leftrightarrow M_{W,h,cur}$) until the threshold values ($v_{0,Sw}$, $a_{y,cur,Sw}$, $\Delta A_{M,Sw}$) are reached, and, when at least two of the aforesaid thre-shold values ($v_{0,Sw}$, $a_{y,cur,,Sw}$, $\Delta A_{M,Sw}$) are ex-

ceeded, a new, current roll momentum distribution ($M_{W,v,new} \leftrightarrow M_{W,h,new} \equiv M_{W,v,cur} \leftrightarrow M_{W,h,cur}$) is calculated,

- the actuation forces ($F_{actuator,v,h}$) of the actuators are calculatied as functions of the momentary transverse acceleration ($a_{y,cur}$) and the current roll momentum distribution ($M_{W,v,cur,} \leftrightarrow M_{W,h,cur}$), and
- a start-up acceleration (a_{an}) or a braking deceleration (a_{br}) is calculated from the rotational speeds (n_R) of the axle wheels, from the engine torque (M_M), from the gearspeed (G_G), from the current spring compressions at the front and rear axles ($s_{cur,VA}$, $s_{cur,VH}$) and from the steering wheel angle (δ_{LR}).

2. The method as claimed in claim 1, wherein, in order to calculate the roll momentum distribution ($M_{M,v,cur} \leftrightarrow M_{W,h,cur}$), a manually actuatable switch which permits selection between a calculation mode for the comfortable and a sporty driving style is interrogated.

3. The method as claimed in claim 1, wherein as the actuators one of hydraulic motors and hydropneumatic components are used.

4. The method as claimed in claim 1, wherein a measured yaw rate (ψ_{meas}) is compared with a setpoint yaw rate (ψ_{setp}), a current roll momentum distribution ($M_{M,v,cur} \leftrightarrow M_{W,h,cur}$) being determined as a function of the vehicle speed (v_0), the change (ΔA_M) in the drive torque and the transverse acceleration ($a_{y,meas}$).

5. The method as claimed in claim 1, wherein with the calculation of the momentary roll momentum distribution ($M_{M,v,cur} \leftrightarrow M_{W,h,cur}$) from the pitch angle ($\chi_{meas}$), the momentary wheel spring travel values ($s_{cur,R}$), the corresponding wheel setpoint spring travel values ($s_{setp,R}$) and the transverse ac-

celeration ($a_{y,meas}$), a switch which can be manually actuated by the driver and which permits selection between a normal driving mode and an off-road driving mode is interrogated.